



City of Moose Lake

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March 7, 2014

Re: Letter – Expression of Interest VIA ECFS

Chairman Thomas Wheeler
Commissioner Mignon Clyburn
Commissioner Jessica Rosenworcel
Commissioner Ajit Pai
Commissioner Michael O’Rielly
Jonathan Chambers
Federal Communications Commission
445 12th Street, SW 20024
Washington, DC

**Re: Expression of Interest – Rural Broadband Experiments
Connect America Fund, WC Docket No. 10-90**

Dear Chairman Wheeler, Commissioners, and Mr. Chambers,

This letter is to express the interest of the City of Moose Lake, Moose Lake Power (municipally owned electric utility), and Moose-Tec (a department of Moose Lake Power) in participating in the Rural Broadband Experiments announced at the January 30th FCC Open Meeting. Currently, the City of Moose Lake through its public utility entity, Moose Lake Water & Light (through Moose-Tec) operate a fiber optic high speed Internet system with wireless high speed Internet services being operated in the rural areas outside the city limits. The proposed project would be to further expand the wireless Internet services into the rural townships and multijurisdictional Counties in the region. The City of Moose Lake takes this opportunity to document the City of Moose Lake’s need for serving high-speed Internet service to the rural areas outside the city limits. The City of Moose Lake asks the Federal Communications Commission to consider these underserved rural areas needs when making decisions regarding the Rural Broadband Trials and any future initiatives related to the Connect America Fund.

Background

The City of Moose Lake is the 2nd largest city (pop. 2,751, Census 2010) in Carlton County, and is located in the southern part of Carlton County in the State of Minnesota. Based on the most recent retail trade area analysis, the City of Moose Lake's region covers over 11,010 people living in 4,151 households. The median household income is \$ 37,030 and the median age is 42.1. The Moose Lake trade area has one of the largest number of 2nd home ownership (people that own a home, but not their primary residence) in the region. The City of Moose Lake (and Carlton County) has one of the largest growth rates in the State of Minnesota in comparing Census 2000 to 2010. The City of Moose Lake is a government employment, retail, and tourism hub for the region. Tapestry segmentation analysis has shown strong median household incomes in the rural areas well above the average city median household incomes revealing an unmet need and the disposable income to purchase Internet services.

On September 12th, 2001 the City of Moose Lake approved Resolution 01-09-01, expanding the operational authority of Moose Lake Power, the City's electric utility to include telecommunication services within the City of Moose Lake; and granted the authority to apply for capital and operating grants to accomplish the mission of completing the following objectives:

- To assist the City in upgrading critical telecommunications infrastructure to attract new businesses and create jobs, and to improve service and support to citizens;
- To provide the community with technical support and training in order for all citizens to gain optional and optimal benefits from improved technology; and
- To manage the operation of a "Community Network" that is both sustainable and self-supporting, by making the necessary capital investment in order to promote and protect the public good.

In 2007, the decision was made by Moose Lake Power to expand wireless broadband to rural areas surrounding the City of Moose Lake.

All the funding necessary to implement this service model has occurred at the local level.

Moose Lake Power (Moose-Tec) currently operate fiber optic and wireless high speed Internet Services to customers in the City of Moose Lake and in rural areas located throughout Carlton County and Pine County. There are approximately 400 customers in the network. The services have grown organically to encompass the greater part of Carlton County and portions of Pine County. We continue to provide increased bandwidth to rural customers whose other options are dial up, poor quality DSL, or satellite. We believe that fixed wireless is by far the most cost effective means to provide quality broadband connections to customers in rural areas. Internet services in the city limits are competitive, but there is a large untapped market to provide high speed Internet services in the rural areas. The growth of customers has been in these rural areas, and there is significant potential growth with the appropriate public investment.

Moose-Tec at this time does not have an ETC license, but if funding were to be

provided we would meet the requirements set forth by the FCC. To our knowledge every household in our projected service area has dial tone access, and several of our customers with broadband access use voice over IP.

Geographic Territory

Carlton County has a number of population centers along the I-35 corridor; other than these, the County is sparsely populated. Geography is somewhat hilly with a mix of small open farms, and heavily wooded forests. Some townships have less than 3 housing units per square mile, which makes fixed wireless the most cost effective means to reach these homes with broadband. Moose Lake Power (Moose-Tec) is proposing to provide fixed wireless broadband service that can deliver speeds in excess of the targeted 4 Mbs down and 1 Mbs up across all areas of Carlton County, which currently do not have access to this level of service. This will include the following census tracts: 701, 703, 704, 705, 706, and 9400. We also propose to include adjacent portions of northern Pine County and Aitkin County.

Proposed technology

Our current tower network is fed with a 100 Mbs fiber link from our fiber optic service in the City of Moose Lake. We have access to Gigabyte plus speeds over fiber to feed our network as we build out our tower network.

Over the past few years we have been transitioning our wireless network to Ubiquity radio products. Ubiquity manufactures, carrier class antennas, base stations, and customer premise equipment, which deliver improved throughput and better resistance to interference by using dual chain MIMO and AirMax (a dynamic TDMA protocol implemented with a proprietary polling mechanism in which the base station controls when each client transmits and receive).

If awarded funding we intend to leverage our current network of towers and experience working with fixed wireless to develop a small cell (15 – 50 households) network of small (50 – 100 ft) towers strategically placed to provide near universal coverage to households in the proposed geographical areas.

This would be essentially an expansion and upgrade of our current delivery system. With equipment currently in use we can provide in excess of 20 Mbs to customers with sufficient signal levels. Closer tower spacing (3-5 miles) would allow us to deliver stronger signal and higher bandwidth to each customer. Point to point equipment currently in use is capable of delivering 120 Mbs tower to tower. Next generation equipment (already available) is capable of delivering over 1 Gbs tower to tower. By strategically upgrading our tower links to gigabyte equipment we can deliver adequate bandwidth to endpoint towers in our network. This will support increased customer bandwidth demand now and into the future (robust and scalable). We are currently expanding at a rate of 2-3 new tower sites per year with an ROI of 24 months. If selected for funding we would propose placing 15-20 new towers per year over the next three years at a cost of approximately \$ 20,000 per tower for a total infrastructure cost of \$ 1 - \$ 1.2 million. Funding for additional personnel and CP equipment is estimated at \$

250,000 per year for three years; at this point the system would be self-sustaining.

Existing Providers

In towns and cities DSL is provided to customers by Frontier and Century Link, speeds range from 2-6 Mbs down and 1-4 Mbs up.

Some cities have cable provided by Media Com or SCI Communications downloads vary from 4-20 Mbs down and 1-2 Mbs up.

In rural areas (as close as 1 mile from town) phone company DSL or dial up is the only wire based Internet services available. Many rural DSL customers report downloads of 1-2 Mbs and uploads of 256 k – 1 Mbs. Customers with dial up as the only option generally subscribe to satellite service.

Moose-Tec provides fixed wireless broadband to a significant area around Moose Lake. We provide equal download – upload service plans that range from 512 k to 10 Mbs. Our services are currently priced at \$ 40 per Mbs per month with a \$ 9.95 per customer surcharge. Our lowest rate is \$ 29.95 per month. Increased number of customers and reduced bandwidth costs would allow us to significantly reduce our pricing.

Local or Tribal Government Participation

The City of Moose Lake participates in State, regional, and local broadband summits. The City of Moose Lake is part of the Arrowhead Regional Development Commission, and has participated in a number of initiatives to learn collaboration opportunities with broadband expansion. The current Moose-Tec coverage area encompasses approximately three fourths of Carlton County by residents located in cities, townships, and Tribal government areas other than the City of Moose Lake.

List of Anchor Institutions

The City of Moose Lake already has a number of anchor institutions in place that received Internet services:

Schools: Moose Lake School District (secondary wireless)

Libraries: Moose Lake Public Library

Healthcare: Moose Lake Hospital, Gateway Clinic (secondary wireless)

City offices: City Hall, Moose Lake Power and Light, and Fire District,

Community Centers: Civic Center, Historical Society, Riverside Arena

State Entities: Department of Corrections, MSOP, DNR, Department of Transportation (secondary wireless opportunity for all State agencies)

Future connections include the following:

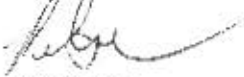
Rural fire districts.

Rural Town halls.

City Halls.

Thank you for considering our Expression of Interest in your decisions about the amount of funding that will be allocated in the Rural Broadband Experiments. We commend the FCC in this effort to connect rural communities and are ready to help you close the digital divide.

Sincerely,

A handwritten signature in dark ink, appearing to read 'Pat Oman', with a stylized flourish extending to the right.

Pat Oman

City Administrator

City of Moose Lake

FCC Rural Broadband Phase II Experiment Eligible Locations

Areas Unserved at 3 Mbps Download/768 Kbps Upload

